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SIL15 Series

Single output

ARTESYN TECHNOLOGIES

NEW Product

- **Ultra-wide trim range (0.9V to 3.3V/5V)**
- **Current sink capable for termination applications**
- **Horizontal and vertical models available**
- **High power density design means reduced board space requirement**
- **Power good output signal (open collector)**
- **Operating ambient temperature up to +80ºC with suitable derating and forced air cooling**
- **Remote ON/OFF (active high)**
- **0A minimum load**
- **Input undervoltage lockout**
- **Over-current and short-circuit protection**

The SIL15 Series is a new high density open frame non-isolated converter for space-sensitive applications. Each model has a wide input range (4.5V to 5.5V or 10.2V to 13.8V) and offer a wide 0.9V to 3.3V/5V output voltage range with a 15A load. An external resistor adjusts the output voltage from its pre-set value of 0.9V to any value up to the maximum allowed value for that model. Typical efficiencies are 89% for the 5V input version and 91% for the 12V input version. The SIL15 series offers remote ON/OFF and over-current protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL15 reduces compliance costs and time to market.

2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 5)	5V input models 12V input models	0.9V to 3.3V 0.9V to 5.0V
Output setpoint accuracy	With 1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2% max.
Load regulation	Full load to min. load	±0.5% max.
Min/max load		0A/15A
Overshoot (at turn on)	5V input models 12V input models	3% max. 1% max.
Undershoot		100mV max.
Ripple and noise 5Hz to 20MHz	(See Note 1)	See table
Transient response (See Note 2)	Deviation	100mV 200µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5V input model 12V input model	4.5 to 5.5VDC 10.2 to 13.8VDC
Input current	Minimum load Remote OFF	65mA 20mA
Input current (max.) (See Note 3)	5V input model 12V input model	11.5A @ Io max. 8.1A @ Io max.
Input reflected ripple (See Note 4)	5V input model 12V input model	200mA (pk-pk) 200mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		 Active high >2.4VDC <0.8VDC
Start-up time (See Note 9)	Power up Remote ON/OFF	<20ms <20ms

INPUT SPECIFICATIONS Contd.

Turn ON threshold	5V input model 12V input model	4.5V 9.0V
Turn OFF threshold	5V input model 12V input model	4.3V 7.5V

GENERAL SPECIFICATIONS

Efficiency		See table
Switching frequency	Fixed	200kHz typ.
Approvals and standards (See Note 7)		TÜV Product Service IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2g (0.5oz)
MTBF Representative model:	MIL-HDBK-217F 12V model @ 40ºC 100% load, ground benign Bellcore 332	468,803 hours 7,817,294 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 10)	Operating ambient, temperature Non-operating	0°C to +80°C -40°C to +125°C
Altitude derating (above sea level)	3,000m (9,843 ft.) 10,000m (32,808 ft.)	20% 50%

International Safety Standard Approvals

c UL us — UL/cUL CAN/CSA 22.2 No. E139421
UL60950 file No. E139421

TÜV — TÜV Product Service (EN60950) Certificate No. B0211 19870 205
CB report and certificate to IEC60950

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Single output

ARTESYN TECHNOLOGIES

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE (12)	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (8)
							LINE	LOAD	
50W	4.5 - 5.5VDC	N/A	0.9V - 3.3V	0A	15A	89%	±0.2%	±0.5%	SIL15-05SADJ-V
75W	10.2 - 13.8VDC	N/A	0.9V - 5.0V	0A	15A	91%	±0.2%	±0.5%	SIL15-12SADJ-V

Notes

1 Measured as per recommended set-up. Cin = 270µF (20mΩ esr max, Cout = 680µF (10mΩ esr max).
2 di/dt = 10A/µs, Vin = Nom, Tc = 25°C, load change = 0.50 Io max. to 0.75 Io max. and 0.75 Io max. to 0.50 Io max.
3 External input fusing is recommended.
4 Measured with external filter. See Application Note 131 for details.
5 Uses external resistor from trim pin to output ground. Min value = 485Ω for 5V model, 280Ω for 12V model. See Application Note 131 for details.
6 Signal line assumed <3m in length
7 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8 The standard unit with the suffix '-V' is for vertical mounting. To order a unit with horizontal mounting, please add the suffix '-H' to the model number, e.g. SIL15-05SADJ-H.
9 Power-up is the time from application of DC input to Power Good enabled. Remote ON/OFF is from ON/OFF asserted high to power good enabled.
10 See Application Note 131 for operation above 50°C.
11 See Application Note 131 for ripple current requirements.
12 These models have a wide trim output. 5Vin has an output of 0.9V to 3.3V and 12 Vin has an output of 0.9V to 5V. An external resistor adjusts the output voltage.

PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	Vout
2	Vout
3	Vout
4	Trim
5	Remote ON/OFF
6	Power Good
7	Ground
8	Ground
9	Reserved
10	Vin
11	Vin
12	Mechanical support (horizontal version only)
13	Mechanical support (horizontal version only)

Ripple and Noise Specification

Model	Output Voltage	Pk - Pk	RMS
5V input models	0.9 to 2.5V	30mV	15mV
	3.3V	40mV	15mV
12V input models	0.9 to 2.5V	50mV	20mV
	3.3V to 5V	50mV	20mV

PROTECTION	
Short-circuit protection	Hiccup, non-latching

RECOMMENDED SYSTEM CAPACITANCE		
Input capacitance	(See Note 11)	270µF/20mΩ esr max.
Output capacitance	(See Note 11)	680µF/10mΩ esr max.

CAUTION: High internal temperatures. Ensure that unit is not user accessible.

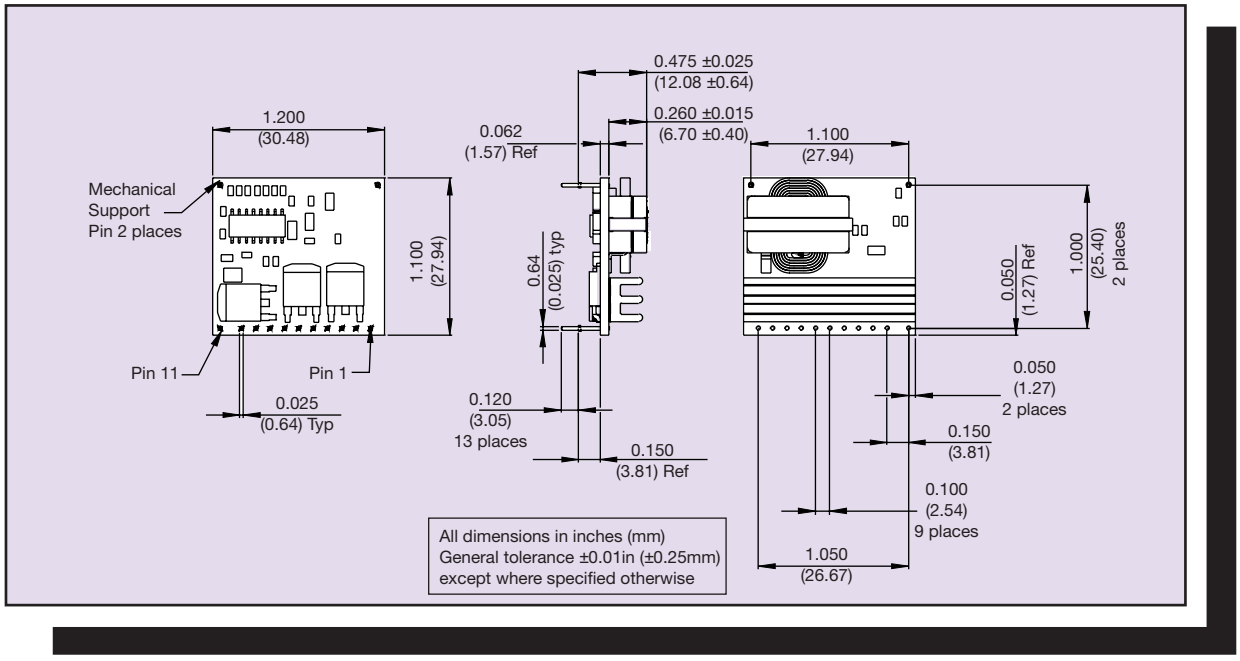

Figure 1: Mechanical Drawing - Horizontal Mount Version

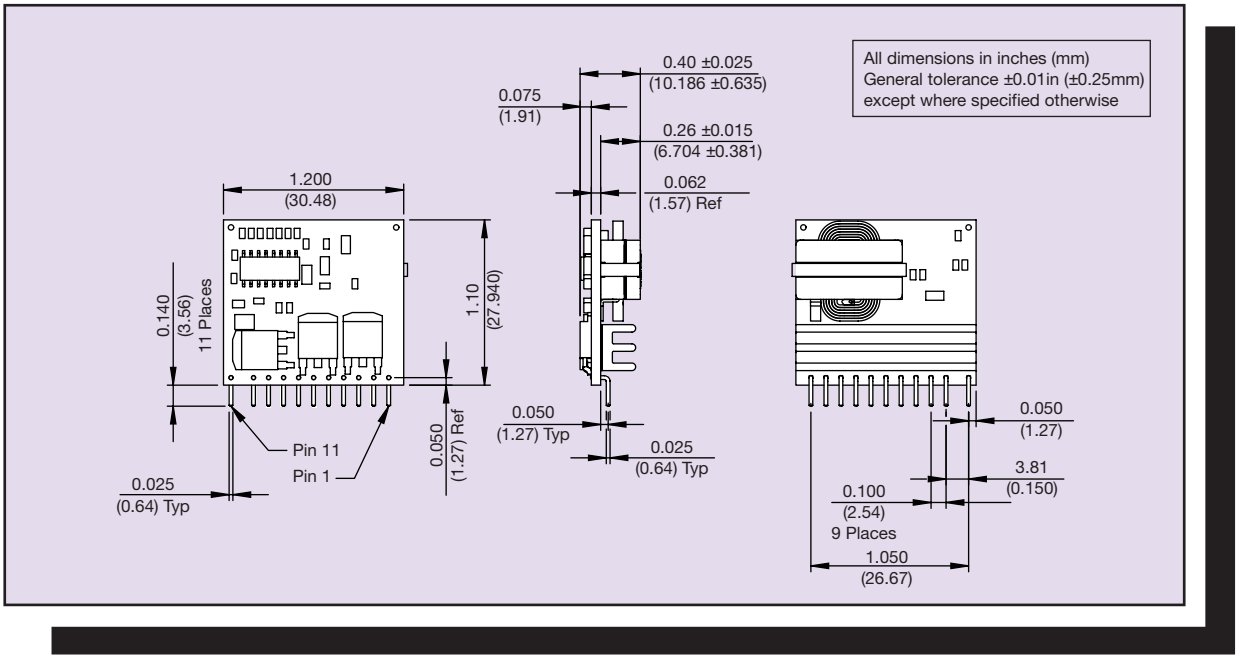

Figure 2: Mechanical Drawing - Vertical Mount Version

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